Report of the Ontario Council of Health on

Annex "E"

Library Services

Ontario Department of Health
Honourable Thomas L. Wells, Minister

LIBRARY SERVICES

ONTARIO

REPORT OF THE ONTARIO COUNCIL OF HEALTH

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JUNE 1969

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FOREWORD

The Committee on Library Services presented this report to the Ontario Council of Health in June 1969. The report was approved by Council after a modification to Recommendation 23 was made with the agreement of the Chairman and Members of the Committee who were present at the Council meeting.

Readers are reminded that while the Ontario Council of Health has endorsed the report as printed, it did so without formally attempting to co-ordinate the views and recommendations presented with those presented by other Committees of Council. In view of this, it is possible that Council could adopt a modified position when the influences of recommendations by other Committees and Sub-committees are assessed.

The report presents a concept for a health information service network for the Province. The concept is founded on two basic principles. The first holds that the network should make its resources universally available to the full spectrum of primary and allied health personnel wherever they may be employed. The second holds that the centres in the province and support for the provincial level should be based respectively on the existing university health science libraries and on the National Science Library. It is proposed that the network which evolved from these two principles be controlled by provincial and regional level co-ordinators acting in concert with a provincial level operating committee.

A few features of the proposed network might be touched upon. Foremost is the fact that recommendations relating to the use of technological hardware are largely limited to the telephone and its variants such as the teleprinter. The potential role of the computer, for example, has been deferred to a future report. Attention has been concentrated rather on the organization and extension of traditional library resources and tools so that their use by the health community might be optimized. Cognizance has obviously been taken of the deliberations of the Committee on Regional Organization of Health Services.

This Committee is concentrating now on the methodology to be recommended for implementing the network.

MEMBERS OF COMMITTEE ON LIBRARY SERVICES

Mr. F. A. Wilson, Chairman	Vice-President Parke & Parke Limited, Hamilton
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Dr. O. B. Bishop	Associate Professor School of Library Science University of Toronto
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ACKNOWLEDGEMENTS

Technical support in the preparation of this report was provided through the auspices of the Research and Planning Branch of the Ontario Department of Health. Under Dr. G. W. Reid, Director, the following staff members worked with the Committee:

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Administrative and secretarial assistance was provided through the Secretariat of the Ontario Council of Health:

Mr. W. F. J. Anderson	Executive Secretary
Mrs. D. Dudley	Assistant to Executive Secretary

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Mr. George Ember	Reference Librarian, National Science Library
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Mr. J. P. I. Tyas	Study Group Leader, Scientific and Technical Information in Canada, The Science Council of Canada

Recommendations

Recommendations

The recommendations of this report are listed below to provide a quick guide for the reader. The Ontario Council of Health has approved the recommendations as presented.

The Health Sciences Information Network

1. THAT, to keep pace with rapid advances in medical and allied health subjects and to provide optimum library arrangements for the health services, a health sciences information network, initially based on existing facilities, be developed in Ontario, and that the network comprise three levels of responsibility:

   Level 1 – primary contact library
   Level 2 – health resource library
   Level 3 – central resource

2. THAT the Department of Health enter into negotiations with the appropriate agencies of the Federal Government to enable use of federal level resources as the central resource for the provincial health sciences information network.

3. THAT the information resources of health sciences centres in Ontario be part of the information network, and the five health sciences centre libraries be requested, and funded, to assume regional network responsibility as health resource libraries.

4. THAT health personnel be informed of their primary contact library and the three levels of service of the health sciences information network for their region, and that users be encouraged to enter the network via their primary contact library.

The Role of the Ontario Department of Health

5. THAT at least one qualified medical librarian (with appropriate support staff) located within the Department of Health be designated provincial co-ordinator and advisor for the health sciences information network.

His responsibilities will include:

a. to assist and maintain liaison with federal level library services;

b. to encourage private provincial associations which have significant library resources to participate within the provincial network;

c. to provide assistance and consultation services to network libraries.

6. THAT an operating committee be established, including the chief librarians of the health resource libraries and other appropriate persons, to work with the provincial co-ordinator who will be appointed chairman of the committee.

7. THAT a health sciences librarian, located in the health resource library for the region, be designated regional co-ordinator.

8. THAT, included in a network programme for information service, there be a field staff of librarians, available within each region, to provide professional consultation and advice to health sciences information facilities, whether or not such facilities form part of the designated information network.

Network Co-ordination and Mechanism

9. THAT health sciences librarians maintain close administrative arrangements and personal liaison with librarians of parent institutions, related libraries in other disciplines, and library organizations in the province and nation.

10. THAT, before a sophisticated system for interrogating files of computerized data is considered for Ontario, a relatively simple system and network be implemented. Successive objectives of the system would include:

a. compatibility of bibliographic records in all health sciences centre libraries;

b. a catalogue in machine readable form;

c. inexpensive book catalogues provided from the mechanized data base;

d. each health resource library to hold book catalogues produced in other regions.

11. THAT every primary contact library subscribe to Index Medicus, both the monthly issues and the annual cumulation.

12. THAT all health resource libraries, and at least one health library in each centre having a group of hospitals or health services, have Telex.

13. THAT a controlled experiment be initiated with Inward WATS telephone information service when offered in Ontario.

14. THAT extension of an interlibrary courier service to major centres of health services be explored.

Health Library Manpower

15. THAT the Committee on Health Manpower direct its attention to the problem of adequate supply of health sciences information manpower, at both professional and technical levels, with indications of avenues of training and probable need as set out in this report.

16. THAT a health sciences librarian be included on the advisory committee for library technician courses at the colleges of applied arts and technology, wherever it seems likely that diplomates from these courses may find employment in health sciences libraries. Such advisory committees are already recommended in general terms to include a representative from the field of special librarianship.

17. THAT the development of a health sciences information network make adequate provision for a continuing programme of training for health sciences information technicians, both by the provision of short courses for staff now active in such units, and by the provision of training for health sciences technicians interested in transferring to the information field.

18. THAT courses for library technicians make available specific technical subjects for health sciences information technicians—for example, familiarity with reference tools in the health sciences.

19. THAT programmes of scholarship and assistance be continued and expanded to attract candidates with a bioscience or premedical background into training for health sciences information services.

20. THAT training programmes and courses, made available by or on behalf of the health sciences information network, include the necessary assistance for all concerned persons to participate.

21. THAT library schools devote increased attention to the needs of persons already working in health sciences libraries and information services. This might include some courses for degree programmes during the summer months for persons unable to devote extended periods to full-time studies.

Assessment and Evaluation

22. THAT the Committee on Library Services examine the network during its implementation phase, and that the Ontario Council of Health continue to advise the Minister of Health on matters relating to the health sciences information network.

23. THAT appropriate pilot projects important to the development of the proposed health information network be formulated by the Committee and supported by the Department of Health.

Report of the Committee

SECTION I

Introduction

The Library Services Committee was given the following terms of reference:

> *This Committee would study all aspects of the library arrangements required for health services and the way the provincial programme would tie in with the national system, and possibly MEDLARS* in Washington. Consultant services would also be part of this arrangement.*

Proceeding from these terms of reference, the Committee has developed a proposal for a regionalized system which would:

1. Allow a health worker to ask a single query to set the whole retrieval function into operation, regardless of who or where he may be.

2. Integrate, where possible, special collections and services within the province into the system.

3. Have, as Central Resource, federal health library services, which would provide access to MEDLARS and other international information resources.

The purpose of the proposed health sciences information

* MEDLARS – An acronym for Medical Literature Analysis and Retrieval System.

network is to give the most effective service to all health personnel. It is anticipated that efficient service will provide sufficient inducement for health personnel to use the network.

The Committee has made a preliminary assessment of existing health information services in the province and identified gaps and deficiencies. It has not, however, considered medical records librarians who are specialists in the use and care of patient and health case records. Neither has it considered patient care information or other raw data.

At present, there is no complete survey of library facilities in the medical and health sciences in Ontario. In a survey based on a questionnaire sent out to approximately 200 hospitals by the Ontario Medical Association in 1967, replies were received from some 78 hospitals. For the most part, the figures showed very poor facilities and very little material except for a few libraries in large city hospitals. Part-time and non-qualified help predominated. Emphasis was placed on hospital libraries because in many cases practitioners do not have any other access to books and periodicals.

A review of facilities in the Hamilton District by the Library Committee of the Hamilton District Hospital Council showed that, excluding the new Biomedical Library at McMaster University, there were some 16 library collections comprising medical libraries in hospitals, nursing school libraries, the Hamilton Academy of Medicine Library, and some special subject libraries. Not one of the 16 libraries engaged a professional librarian. The greater number had untrained and part-time staff members, no indexes, and restricted hours. Together, they serve more than a thousand physicians and a large number of nurses, nursing students, laboratory technicians, sociologists, psychologists, teachers and others.

According to these and other published and unpublished surveys, such as the thesis for M.S. in L.S. (Wayne University, 1968) by Barbara Craig: "An Evaluation of Hospital Library Service in Essex County" and the Ohio study described in the studies by the Centre for Documentation and Communication Research of Case Western Reserve University*, there is no reason to believe that the position is any better anywhere in Ontario. This has been borne out by the personal experiences of interested members of the Committee on visits, and smaller surveys such as by library school students.

* Appendix B, Reference 14.

It was found in Hamilton, and also reported by Dr. Campbell of the Ontario Medical Association, that where users were provided with a library service and made aware of its availability they tended to utilize it increasingly. The rapidly changing patterns of health care delivery demand an efficient library service to all persons engaged directly or indirectly in patient care. A planned network of library facilities, covering the entire province, would bring material and information to any practitioner or health care worker quickly and efficiently.

SECTION II

Glossary of Terms

BIBLIOGRAPHIC CENTRE

A central agency, (serving a region) which maintains a Union Catalogue (see below) and assists local libraries to locate items needed for inter-library loan.

The centre may also offer a system for the exchange of duplicates.

BIBLIOGRAPHIC RECORD

A Bibliographic Record is all the recorded information which pertains to one particular item in the library's collection.

BROWSING

Scanning, by a patron, of a library's collection, particularly of new books and current journals which are attractively and logically displayed.

COLLECTION

A group of objects or an amount of material accumulated in one location, especially for some purpose or as a result of some process—i.e., a library's holdings and current acquisitions.

CURRENT AWARENESS SERVICE

The provision, to a library patron, of printed materials, within his fields of interest, which he has not specifically requested and, often, of whose very existence he was not aware. (See also SDI below.)

INDEX MEDICUS

A monthly (with annual cumulation) printed listing of articles in 2,400 medical journals, by subject and author, produced by the National Library of Medicine from MEDLARS tapes (see below).

INDEXING SERVICES (such as Chemical Abstracts Services and Institute for Scientific Information tapes)

Commercial firms which supply bibliographic references by analyzing the contents of journals, new pamphlets, books, etc., and issuing computer tapes or printouts.

INFORMATION SCIENTIST
A professional practitioner of the discipline of information science

As a discipline, information science investigates the properties and behaviour of information, the forces governing the transfer process, and the technology necessary to process information for optimum accessibility and use. Its interests include information representations in both natural and artificial systems, the use of codes for efficient message transmission, storage, and recall, and the study of information processing devices and techniques such as computers and their programming systems. It is an interdisciplinary field derived from and related to mathematics, logic, linguistics, psychology, computer technology, operations research, librarianship, the graphic arts, communications, management, and similar fields. It has both a pure science component, which inquires into the subject without regard to application, and applied science component, which develops services and products.

LIBRARIAN (See Section V, 1c.)

MEDICAL RECORD LIBRARIAN

The medical record librarian is not a professional librarian or a

library technician (see Section V, 1c.) as the terms are used in this report. He is a highly specialized person whose training is obtained through a formal one-year, post-secondary course. The medical record librarian compiles and maintains medical records of hospital and clinic patients; reviews clinical records; codes, indexes and files records of diagnoses, diseases, and treatments; compiles statistics; releases medical information to staff and authorized agencies; may brief and transcribe records; may testify in court to authenticate medical records.

MEDLARS
(Medical Literature Analysis & Retrieval System)

A computer-based bibliographical key to the world's Medical Journals, compiled since 1964 by the National Library of Medicine in Bethesda, Maryland.

MEDLARS has three major subdivisions: (i) an input sub-system in which the skills of professional indexers are used in connection with the capabilities of a large-scale digital computer; (ii) a retrieval sub-system in which the capabilities of professional literature searchers are used in connection with computer manipulations; and (iii) a publication sub-system that converts citations into photopositive film.

N.L.M.

The National Library of Medicine (an agency of the U.S. Department of Health, Education, and Welfare) located in Bethesda, Maryland. The central resource for the U.S. existing Biomedical Information System.

N.S.L.

National Science Library, at present the central resource for the Canadian bibliographic requirements in science, technology, and medicine, located at the National Research Council building in Ottawa.

PROFILE

A machine readable summation of a reader's interests formed by a combination of search expressions compiled from key words (subjects), titles, authors, names of journals, etc.

SDI (Selective Dissemination of Information)

Systems for bringing published papers or reports or their titles to the desk of a scientist, on the basis of comparison of their subject content with the "profile" of his scientific interests. The term SDI is commonly used for systems in which the selection is made by a computer matching of stored interest profiles against titles or indexing terms.

SERIAL

A publication issued in successive parts, usually at regular intervals, and, as a rule, intended to be continued indefinitely. Serials include periodicals, annuals (reports and year-books), memoirs, proceedings and transactions of societies.

SPECIAL LIBRARIANSHIP (see Recommendation 5)

The administration (or staffing by professional librarians) of a library or information unit in a government, industrial, or association organization, or in a subject department of a large library, as contrasted with the general practice of the profession of librarianship in a public, school, college, or university library.

SWITCHING MECHANISM (A Referral System)

In performing this function, the library is like a communications centre, or post office, where a large number of messages (queries) are routed through a central point, and where the messages are filed, encoded, assigned a priority, and retransmitted to the addresses or to other communication centres for retransmission.

TELEX

A communications network consisting of teletypewriters and a telephone hook-up. Messages are recorded (in writing) at the receiving terminal at the same time as they are being sent. A useful and speedy system for obtaining inter-library loans, etc.

UNION CATALOGUE

An author or a subject catalogue (usually, but not necessarily a card catalogue) of all the books or journals, or a selection of books, in a group of libraries, covering books in all fields, or

limited by subject or type of material, generally established by co-operative effort.

UNION LIST

A printed record of some or all of the materials whose locations are noted in a union catalogue.

WIDE AREA TELEPHONE SERVICE (WATS)

Long distance service allowing unlimited calls to a given area, which may be a single telephone local calling area, or as wide a calling area as desired. All of Ontario, or a given Area Code, might be used in the proposed network. Service can be 24 hours a day, or to a minimum of ten hours per month, plus overtime at an hourly rate.

Inward WATS allows unlimited calls from any telephone in a designated area, such as one local calling area or one Area Code, to a given called number. A special access code is required to reach the called number. Any user of information service could call the designated Health Information number free of charge if he has the correct access code.

Inward WATS differs from simple reversed-charge calling because the call is placed automatically and cheaply, and from Zenith service because it is not available unless the caller has the access code. Zenith service is used by business firms to accept customer calls; it is operator dialed, rates are high, and it is available only on a single-exchange basis.

SECTION III

Structure of the Information Network

The Committee envisages a network system that would enable any user, anywhere in the province, to obtain the information he requires through a single inquiry at his Primary Contact Library and feels strongly that this ideal can be attained by building on existing resources and technology. Inclusion of special collections, where possible, would expand resources and benefit the system.

The five health sciences centre libraries would serve as regional Health Resource Libraries. Special arrangements would have to be made for Northern Ontario.*

Since no central back-up exists at the provincial level, the Committee recommends, as feasible and logical, use of the highest federal level resources as a Central Resource for the provincial system. (This is based on briefings by the National Science Library and the Study Group on Scientific and Technical Information in Canada of the Science Secretariat of the Privy Council. The Study Group's report, published in April 1969, calls for establishment of a nation-wide information network; however, time did not permit detailed study by the Committee prior to submission of this report.)

In proposing a three-tier structure for the Ontario information network, the Committee has focused on *levels of network*

* This appears to be compatible with the principle that health sciences centres serve as focal points for regional organization of health services. (Report of Committee on Regional Organization, January 1969).

responsibility rather than size of library. A graphic illustration of the network structure is attached as Appendix E.

> *THIS COMMITTEE RECOMMENDS that, to keep pace with rapid advances in medical and allied health subjects and to provide optimum library arrangements for the health services, a health sciences information network, initially based on existing facilities, be developed in Ontario, and that the network comprise three levels of responsibility:*
>
> *Level 1 – Primary Contact Library*
> *Level 2 – Health Resource Library*
> *Level 3 – Central Resource*
>
> *(Recommendation 1)*

1. PRIMARY CONTACT LIBRARY (Level 1)

A Primary Contact Library is that information unit to which a health worker naturally turns for his first attempt to procure information from a formal source. It may be the library of the health worker's own institution, the library of an institution or organization with which he is affiliated, or the nearest library providing effective information service.

a. Responsibility and Scope

Primary Contact Libraries will vary in size and complexity. Their responsibilities will include provision for support of research and teaching needs, browsing facilities to keep local personnel informed of new developments in their field, and resources for specific problem solving. Primary responsibility will be to its own institution, local staff and patrons.

Libraries located in or operated by a variety of individual institutions could serve as Primary Contact Libraries and provide direct access to the network. Three distinct categories of health library have been identified:

(1) Basic health information units (general hospitals, public health services).

(2) Research and teaching libraries (health sciences centres, teaching hospitals, research institutes).

In its role as a Primary Contact Library, the health sciences centre library will serve both research and teaching needs in one or more disciplines (e.g., medicine, dentistry, pharmacy, nursing, veterinary medicine, etc.).

It is envisaged that the five health sciences centre libraries would also serve as regional Health Resource Libraries.

(3) Professional association libraries (the libraries of associations such as the Canadian and Ontario Medical Associations, Canadian Dental Association, Registered Nurses' Association of Ontario, Medical Academies, etc.).

THIS COMMITTEE RECOMMENDS that every Primary Contact Library subscribe to Index Medicus, both the monthly issues and the annual cumulation.
(Recommendation 11)

Index Medicus will enable a more effective approach to the information network by providing an initial review of recent literature. The proposed abridged Index Medicus may be adequate.

b. **Personnel**

Information units will vary not only in number of staff needed, but in the level of staff appropriate to the complexity of service offered, the complexity of informational resources, and the questions posed by users. Thus, basic health information units containing minimal-level collections should have a minimum of one library technician, while specialist units and research and teaching units with extensive information resources, and intensive service responsibilities within their own institutions, as well as co-ordination or specified responsibility to the information network, will require professional staff (librarians), supported by library assistants and technicians. Details of personnel requirements are described in Appendix C.

c. **Mechanism**

The health sciences information network in Ontario should operate as a clearly defined and structured system.

THIS COMMITTEE RECOMMENDS that health personnel be informed of their Primary Contact Library and the three levels of service of the health sciences information network for their region, and that users be encouraged to enter the network via their Primary Contact Library. (Recommendation 4)

Nevertheless, there must be complete freedom of access to the network or to information resources beyond the network, without coercion to use a designated library, or penalty for failing to use the appropriate Primary Contact Library.

Within each region, the Primary Contact Libraries should be connected to the Health Resource Library by telephone and possibly teletype.

d. **Users**

Everyone directly or indirectly concerned with health care is a potential user of the Primary Contact Library.

Health personnel may be divided into two groups: those associated with an institution to whom information service is available in the institution (e.g., medical practitioners, nursing personnel, pharmacists, dietitians, administrative personnel) and those in private practice or other situation where information services are not readily available. The latter group comprises members of the health professions, technologists, technicians, and administrators. For these persons a point of access to the network must be designated.

2. HEALTH RESOURCE LIBRARIES (Level 2)

The Health Resource Libraries to serve each region are a major component of the proposed health information network for Ontario.

a. **Responsibility and Scope**

In addition to making their own information resources available to the network, the Health Resource Libraries will be instrumental in effecting network co-ordination and providing assistance and consultation to the Primary Contact Libraries in their region. The

Committee feels that the health sciences centre libraries could best fulfil this role.

> *THIS COMMITTEE RECOMMENDS that the information resources of health sciences centres in Ontario be part of the information network, and the five health sciences centre libraries be requested, and funded, to assume regional network responsibility as Health Resource Libraries. (Recommendation 3)*

Thus the health sciences centre libraries will have a dual role in the Ontario information network—i.e. as a regional Health Resource Library and as a Primary Contact Library for its own academic community and practitioners working in isolated areas.

Special arrangements would be required for Northern Ontario. Consideration might be given to setting up a Health Resource Library at a university with a good biology collection, in conjunction with a large hospital, or one of the health sciences centre libraries might assume the additional responsibility to serve Northern Ontario.

Each Health Resource Library would have network access to the other Health Resource Libraries as well as to the National Science Library.

b. Personnel

Health Resource Libraries will require librarians supported by adequate numbers of library assistants and technicians. The usual distribution of positions will be, for each professional staff member, supporting staff of one library technician and one to two library assistants. Details of personnel requirements are set out in Appendix C.

c. Mechanism

Requests from a Primary Contact Library which cannot be filled by the Health Resource Library directly will be rerouted immediately in one of three possible directions:

(1) To another Primary Contact Library within the region;

(2) To a Health Resource Library in another region;

(3) To the National Science Library.

d. **Users**

In addition to their regional network responsibility, the Health Resource Libraries will also serve as the Primary Contact Library for isolated practitioners and their own academic community, including faculty, students, technologists, technicians, and administrators.

3. CENTRAL RESOURCE – INFORMATION (Level 3)

The Ontario health sciences information network will require, as the Central Resource, federal health library services which would provide access to MEDLARS and other international information resources.

> *THIS COMMITTEE RECOMMENDS that the Department of Health enter into negotiations with the appropriate agencies of the Federal Government to enable use of federal level resources as the Central Resource for the provincial health sciences information network. (Recommendation 2)*

The National Science Library has established a Bibliographic Centre for the Medical and Health Sciences. The objective of the Centre is to become a well-equipped medical resource library which can act as a back-up to other medical libraries, thus increasing the quality of national health information services. At present there is a collection of over 3,200 current medical serial titles, including all but 23 of the 2,400 titles in Index Medicus. The library also subscribes to 47 health sciences indexing services.

Included in the plans of the Centre for sophisticated library services is a computer-produced French/English index to all medical proceedings, symposia, or conferences. The computer file for the index will be available for current awareness searches.

The Selective Dissemination of Information (SDI) service now being established by the National Science Library is one of the ways in which the third level of information services can be provided. This service is important in keeping scientists up-to-date and is being expanded to include scientists throughout Canada, and is based on searches on two magnetic tape services: Chemical titles on tape from

Chemical Abstracts Services and tapes from the Institute for Scientific Information (ISI). A total of 2,481 journals are covered by these tapes, providing approximately 600,000 title references annually. With the addition of the MEDLARS tapes, and the file of the National Science Library medical proceedings index as a data base, comprehensive searches will be possible for all personnel in the health science field in Ontario. Subscribers would receive weekly bibliographies in their specific fields of interest. This service should be supplied through the Primary Contact Libraries in the network.

Profiles* are the most difficult part of the current awareness system. A weighting system is used to ensure that only material which would be particularly relevant to the user would be retrieved through a search of the computer tapes using the user's profile. Profiles, either individual or group, can be established with the assistance of the National Science Library and should be considered an integral part of the health sciences information network service.

If health sciences personnel do not have access to a Primary Contact Library they will work directly with a Health Resource Library in securing this service. The Health Resource Library should also co-ordinate subscriptions to the SDI service, so that unnecessary duplication does not occur in any region, or between regions.

The National Science Library also hopes to become a subscriber to the MEDLARS System as soon as MEDLARS is converted to a format which can be used on the IBM System 360, Model 50 computer. Whether any medical library in Ontario would then need to participate directly in the MEDLARS System should be determined within the next year.

The Bibliographic Centre for the Medical and Health Sciences of the National Science Library can thus be envisioned as the third level of a health sciences information network in Ontario.

* A profile is a description in subject terms of the fields of interest of an individual user. The cost of the service is $100.00 per annum for each 60 term profile.

SECTION IV

Co-ordination and Communication

1. NETWORK CO-ORDINATION

To achieve optimally efficient service, the health information network for Ontario must be supported by a co-ordination mechanism. Since information on the basis of a single query should flow unimpeded from source to user, whoever and wherever he may be, co-ordination must be effected at the provincial, regional, and local levels to provide a cohesive and uniform service throughout the province.

The co-ordination of regional level services is unlikely to evolve quickly in the absence of central encouragement. The objective here is to ensure easy access to special resources of one centre by another which lacks them. Not only are designated regional centres involved, but also other new health sciences centres and university libraries with related resources, such as those in veterinary medicine. Further, and more importantly, co-ordination must be effected between federal level library resources and the provincial system, if the system is to have an adequate third level back-up.

a. **Provincial Level**

The network co-ordinating unit should be established within the Department of Health and staffed by at least one qualified medical librarian with appropriate support staff. The unit's activities would be directed toward enhancing network efficiency by facilitating co-ordination within the provincial system as well as with the

third-level Central Resource. Specific suggested functions are listed in Appendix D.

> *THIS COMMITTEE RECOMMENDS that at least one qualified medical librarian (with appropriate support staff) located within the Department of Health be designated provincial co-ordinator and advisor for the health sciences information network. His responsibilities will include:*
>
> *(a) To assist and maintain liaison with federal library services;*
>
> *(b) to encourage private provincial associations which have significant library resources to participate within the provincial network;*
>
> *(c) to provide assistance and consultation services to network libraries. (Recommendation 5)*

The health sciences centre libraries, serving as Health Resource Libraries (Level 2), will provide the major resources for intensive information retrieval and will be involved in network co-ordinating functions. Nevertheless the strongly developed library systems of the universities must retain their autonomy while participating in this co-ordinated effort. To enable these libraries to fulfil their dual role, with the encouragement and support of the Provincial Government, the Committee recommends a co-ordinating and operating council or committee, on the model of other co-ordinating bodies in which Ontario universities participate, specifically for network purposes.

This operating and co-ordinating committee will be a peer committee consisting of the chief health science librarians involved, and other appropriate persons, and responsible for effective operation of the network.

> *THIS COMMITTEE RECOMMENDS that an operating committee be established, including the chief librarians of the Health Resource Libraries and other appropriate persons, to work with the provincial co-ordinator who will be appointed chairman of the committee. (Recommendation 6)*

b. Regional Level

Co-ordination of the flow of information and interlibrary loans, within regions and between Health Resource Libraries and Primary Contact Libraries, will be best effected through a health sciences librarian designated as co-ordinator and located in the Health Resource Library for the region. This co-ordination librarian will be responsible for facilitating the flow of information and providing assistance and consultation to Primary Contact Libraries within the region.

Specific suggested functions of the co-ordinators are listed in Appendix D.

> *THIS COMMITTEE RECOMMENDS that a health sciences librarian, located in the Health Resource Library for the region, be designated regional co-ordinator. (Recommendation 7)*

> *THIS COMMITTEE RECOMMENDS that, included in a network programme for information service, there be a field staff of librarians, available within each region, to provide professional consultation and advice to health sciences information facilities, whether or not such facilities form part of the designated information network. (Recommendation 8)*

2. NETWORK COMMUNICATIONS

a. Teletype

Written communication is necessary for transmission of bibliographic information. The experience during 1966-69 of the 14 Ontario university libraries with commercial Telex indicates the feasibility of using this as the first stage for basic interlibrary communication.*

> *THIS COMMITTEE RECOMMENDS that all Health Resource Libraries, and at least one health library in*

* The probable cost, based on a monthly rental of about $80 plus message charges, is $150 to $200 per month per library.

each centre having a group of hospitals or health services, have Telex. (Recommendation 12)*

b. **Telephone**

Service to isolated users and to smaller libraries not equipped with teletype must be by telephone. Ideally, toll-free long-distance service should be available. In the first phase, ordinary station-to-station calls can be used on a reversed charge basis. A special "Health Info" number could be designated for each resource library, separate from other uses, and a distinctive number arranged with the telephone company.

In the second phase, after experience with the service and the probable load, an experiment can be made with "Inward WATS" service, which should be available in mid-1970.** Inward WATS will make possible concentration of network queries on a single resource library in a single telephone area.

THIS COMMITTEE RECOMMENDS that a controlled experiment be initiated with Inward WATS telephone information service when offered in Ontario. (Recommendation 13)

c. **Telefacsimile**

Telefacsimile is at present economically infeasible except for highly important, compact materials (few pages) where time is all-important. Pilot experiments were proposed for Ontario in the St. John Report of 1966. Experiments in Nevada and New York in 1967-68 indicated that the cost is still excessive and the capacity limited for distances such as are found in Ontario. The probable cost is at least a dollar a page, and the New York costs were much higher. This Committee does not recommend experiments in telefacsimile at present.

* Probable cost to the network, possibly on a subsidy of rental plus fractional message costs, might be $2,500 to $3,750 per month.

** Inward WATS (Wide Area Telephone Service) is not the same as "Zenith" service. The latter is a toll-free reversed-charge long-distance service, available on a single-exchange basis for business firms. Inward WATS involves a special access code and is available on a limited-time basis. Inward WATS for most of Ontario would be available for as little as $210 per month.

d. Interlibrary Transit

Since 1967 the Ontario university libraries have operated a limited but highly successful Inter-University Transit System of station-wagon delivery for library materials, five days a week, covering the width of the province. The health sciences centres at the universities already benefit from this system, which is particularly important for tapping the resources of the National Science Library.

> *THIS COMMITTEE RECOMMENDS that extension of an interlibrary courier service to major centres of health services be explored. (Recommendation 14)*

3. RELATIONSHIP TO OTHER INFORMATION RESOURCES

The health sciences information network, the specialized units co-ordinated in that network, and the Bibliographic Centre for the Medical and Health Sciences of the National Science Library, together, comprise the major and primary resource for the disciplines served. As such, the network and those resources will strive for capacity provincially for service at the 85 per cent level of adequacy and, in relation to the national resource, at the 95 per cent level.

Science is increasingly interdisciplinary in nature. The physical and biological, the pure and applied sciences, the scientific and engineering aspects, are increasingly related and co-ordinate. The economic, social, and political considerations of health sciences are only beginning to intensify. A constantly increasing interplay of information demands will therefore be felt by the Health Resource Libraries, and by information units in specialized research and teaching institutions, with relation to information services in other disciplines.

Effective contact must be constantly maintained between the health sciences libraries, and their network, and the information services of parent institutions and other major resources. These include the general university libraries, the National Library, and the growing co-operative services of the provincial and national levels of libraries.

This liaison can be maintained in such ways as the following:

- Use of the same telecommunication network as the general library community (presently commercial Telex).

- Use of the same interlibrary loan code, forms and general conventions as generally accepted.

- Reciprocal availability of service to all members of the served community (the academic community, or the community of the discipline served by the information resource).

- Formal and regular liaison between, and participation in appropriate administrative arrangements with, the administrators of other and general information services.

- Recognition that the health sciences information resources, while separate and distinct in their identity, are an integral part of the total information resources and services of the parent institution.

THIS COMMITTEE RECOMMENDS that health sciences librarians maintain close administrative arrangements and personal liaison with librarians of parent institutions, related libraries in other disciplines, and library organizations in the province and nation. *(Recommendation 9)*

4. COMPUTER FACILITIES

Computer facilities capable of providing various aspects of library service to their own academic community are already available in some of the Health Resource Libraries. Although it is essential that the health sciences information network established for Ontario be compatible with the library system on any individual university campus or with the proposed Bibliographic Centre network of the fourteen university libraries in Ontario, it is not considered that initially such computer facilities will be necessary to support the health sciences information network. It is assumed that it will be several years before the Ontario network could be in a position to consider a sophisticated computer file interrogation system such as exists for the health sciences libraries in New York State.

THIS COMMITTEE RECOMMENDS that, before a sophisticated system for interrogating files of computerized data is considered for Ontario, a relatively simple system and network be implemented. Successive objectives of the system would include:

(a) Compatibility of bibliographic records in all health sciences centre libraries:

(b) A catalogue in machine readable form:

(c) Inexpensive book catalogues provided from the mechanized data base;

(d) Each Health Resource Library to hold book catalogues produced in other regions.

(Recommendation 10)

Successive objectives of the system would include the following:

(1) Compatibility of bibliographic records in all health sciences libraries—whether Primary Contact Library or Health Resource Library. This could be achieved through co-ordination (if not centralization), by the Health Resource Library in each region, of the cataloguing of all materials in the Primary Contact Libraries. The Health Resource Libraries must ensure that they are also compatible with each other so that one bibliographic system will exist for health sciences in Ontario.

(2) To provide access to the health sciences collections of each region, a union catalogue should be established in each Health Resource Library. A catalogue in machine-readable form, containing those data elements necessary for direct citation retrieval, should be developed. This could be achieved using comparatively unsophisticated equipment, at a lower cost than would be required for a complete manual union card catalogue.

(3) With a machine-readable data base established for each region, inexpensive book catalogues of the various collections could be provided. A union list of health science journals in each region would be one of the primary print-outs.

(4) Each Health Resource Library would hold the book catalogues produced in the other regions to use as the basis of the switching mechanism for the network.

A sophisticated computer-based information retrieval system for the health sciences known as MEDLARS has been developed by the National Library of Medicine in Washington. The National Science Library in Ottawa has announced that it plans to become a terminal for the MEDLARS system in Canada. Whether one facility providing MEDLARS services will be adequate for Canada or another terminal should be established for Ontario alone (e.g., at the University of Toronto) can not be definitely stated at this time.

5. USER COMMUNITY AND ACCESS

The purpose of the proposed health sciences information network is to give the most effective service to all health personnel. It is anticipated that efficient service will provide sufficient inducement for health personnel to use the network and enter it via the appropriate Primary Contact Library.

The Committee is of the opinion that the majority of health personnel, like those in other disciplines, get their information largely through personal contact with colleagues.* With the establishment of an information network, as outlined in previous sections of this report, it is anticipated that effective utilization of the system by health personnel will improve the efficiency of health services throughout the province.

Appendix A shows the estimated number of users, level of natural access to the proposed network by classes of health personnel and setting, and how information would be obtained under the proposed system.

* This opinion is confirmed by many published studies, e.g.:

- "Collaboration in an Invisible College," D. J. Price & Donald deb. Beaver, *Amer. Psychol., 21* (Nov. 1966) 1011-1018.
- "The Biomedical Communication Problem," R. O. Schmitt, *Technol. Rev. 66 (5):* 1-4, Mar. 1964.
- "Review of 'Flow of Information Among Scientists,' " R. Shaw, *Coll. Res. Libr., 20* (1959) 163-164.

SECTION V

Manpower

Information services for the health sciences must depend on personnel trained to make best use of local and network resources, and with training and background suited to the level of service (see Section III) in which they operate. Details of categories of library personnel, training, and manpower requirements, are given in Appendix C.

Since the *quality* of staff is the single most important factor in the effectiveness of the health sciences library, manpower aspects had to be taken into consideration in developing the proposed information network.

1. CATEGORIES OF PERSONNEL

The network will require three types of staff:

a. **Library Assistants** perform routine tasks within established functions, following methods established and direction given by supervisory staff. High school graduation and some office skills (typing, filing) are required.

b. **Library Technicians** perform tasks requiring detailed knowledge of library functions, techniques, and operations, with minimal supervision or with referral to senior technicians or professional supervisors for decisions on policy or interpretation of difficult

situations. Technicians must have formal education, preferably at the post-secondary level, and a knowledge of library functions and techniques gained either by formal training or by extended experience.

c. **Professional staff** (librarians, information specialists) possess formal academic qualifications representing both extensive theoretical knowledge of the information and library field, and knowledge of the function and operation of information services. Librarians hold a first university degree followed by a degree or diploma representing one or more years of professional education in librarianship.*

Several avenues are open for the recruitment, training, and development of library technicians.**

THIS COMMITTEE RECOMMENDS that, to provide adequate numbers and ensure appropriate training,

*1) a health sciences librarian be included on the advisory committee for library technician courses at the Colleges of Applied Arts and Technology, wherever it seems likely that diplomates from these courses may find employment in health sciences libraries. Such advisory committees are already recommended in general terms to include a representative from the field of special librarianship.*** (Recommendation 16)*

2) the development of a health sciences information network make adequate provision for a continuing programme of training for health sciences information technicians, both by the provision of short courses for staff now active in such units,

* *Librarians* are to be distinguished from "Medical Records Librarians" who are specialists in the use and care of patient and case health records. This Committee is concerned only with bibliographic information in libraries and their librarians, rather than with health records and medical records librarians.

** E. L. Hoey: "Establishing a Medical Library Technology Program"–*Bulletin of the Medical Library Association,* Vol. 57, p. 151-159, April 1969.

*** Recommendations of the Training of Library Technicians Sub-committee of the Education for Library Manpower Committee, Canadian Library Association, June 1968.

and by the provision of training for health sciences technicians interested in transferring to the information field. (Recommendation 17)

3) *courses for library technicians make available specific technical subjects for health sciences information technicians–for example, familiarity with reference tools in the health sciences. (Recommendation 18)*

Training of librarians is provided in schools of library and information science attached to universities. For information service in the health sciences, a background in the biological sciences or health sciences is particularly valuable.

THIS COMMITTEE RECOMMENDS that programmes of scholarship and assistance be continued and expanded to attract candidates with a bioscience or premedical background into training for health sciences information services. (Recommendation 19)

Professional personnel should be encouraged to participate in continuing education programmes, and in activities of local and national professional associations. Paid leave and financial support to attend professional meetings and educational programmes should be consistent with that made available to other departments of the health care facility.

THIS COMMITTEE RECOMMENDS that training programmes and courses, made available by or on behalf of the health sciences information network, include the necessary assistance for all concerned persons to participate. (Recommendation 20)

THIS COMMITTEE RECOMMENDS that library schools devote increased attention to the needs of persons already working in health sciences libraries and information services. This might include some courses for degree programmes during the summer months for persons unable to devote extended periods to full-time studies. (Recommendation 21)

2. ESTIMATED MANPOWER REQUIREMENTS

The total estimated staff requirements for the information network (see Appendix C) are: 90-125 librarians, 190-220 library assistants and 180-220 library technicians.

> *THIS COMMITTEE RECOMMENDS that the Committee on Health Manpower direct its attention to the problem of adequate supply of health sciences information manpower, at both professional and technical levels, with indications of avenues of training and probable need as set out in this report.*
>
> *(Recommendation 15)*

3. CONSULTATION

As suggested in Section IV, consultation and liaison at a high level of professional development in librarianship must be constantly available to ensure smooth operation of an information network, availability of information to the user at every terminal of the network, and best use of the funds invested in the network. Such consultation and liaison must be provided in part by the close co-operation of the professional staff in large information facilities, and most importantly by a consulting field staff provided by the network and available to those information facilities which have no professional staff.

SECTION VI

Implementation

Throughout the development of a proposed health sciences information network for Ontario, the Committee has been aware that implementation of many of its recommendations will pose problems requiring detailed study. The system as outlined in this report should be technically and economically feasible and fulfil the demands which health personnel may reasonably make of it. The Committee would emphasize, however, that need for information is not always perceived by the potential user. Demand and need may differ, particularly in the implementation phase. For this reason, it is important that the implementation and early operational phases continue to be evaluated so that genuine deficiencies in the network may be identified and corrected. It must also be recognized that the sole purpose of the network is information flow. The network is, therefore, a dynamic system which must improve with time and keep pace with changes in the health care system which it is designed to support.

> *THIS COMMITTEE RECOMMENDS that it examine the network during its implementation phase, and that the Ontario Council of Health continue to advise the Minister of Health on matters relating to the health sciences information network.*
>
> *(Recommendation 22)*

As a first step toward developing a subsequent report to Council on implementation of the recommendations as set out, this Committee has requested a survey of existing information resources and library

facilities for the health care system in Ontario. The Committee is also of the opinion that appropriate pilot projects should be mounted to test the feasibility of the proposed information system, demonstrate specific aspects of its operation, and indicate the probable parameters of demand for the information service it provides. Indications have been given to the Committee that more than one institution would be eager to undertake a major pilot project and that professional associations in the health field would encourage them. Such projects could serve to work out the basic principles of the proposed health sciences information network, identify problems calling for solution, and demonstrate specific aspects (e.g., financial implications).

> *THIS COMMITTEE RECOMMENDS that appropriate pilot projects important to the development of the proposed health information network be formulated by the Committee and supported by the Department of Health. (Recommendation 23)*

It is evident that an equally useful hierarchical structure could have been designed by creating special provincial, regional, and district health libraries. It is equally evident that such resources would be extremely expensive to establish and would represent waste, when the National Science Library and five university health science libraries already exist in Ontario. The Committee, therefore, accepted this premise and took the logical step of recommending (Recommendation 3) that university health science libraries act as regional health resource libraries, and that arrangements be made to have the national libraries fulfil the role of provincial supporting resource.

The health science libraries of the universities, therefore, will have regional responsibilities involving co-ordination of their own functions as well as those of smaller units within their regions and liaison with federal level information resources. The strongly developed library systems of the universities must continue to retain their autonomy while participating in this co-ordinated effort. This Committee, therefore, recommends a co-ordinating and operating committee, on the model of other co-ordinating bodies in which Ontario universities already participate, specifically for network purposes (Recommendation 6). This operating committee will enable the university health science libraries, in their function as health resource libraries, to maintain the network as a close and effective partnership with the encouragement, co-ordination and support of the Province.

This operating and co-ordinating committee is to be distinguished, however, from the committee already recommended (Recommendation 22) for purposes of evaluation, review, development, and advice to the Ontario Council of Health. The operating and co-ordinating committee is a peer committee charged with effective function; the review and advisory committee would have no operating function. The operating and co-ordinating committee would comprise Chief Health Science Librarians and other appropriate persons, while the review and advisory committee represents a wide spectrum of interests.

Although this report has concentrated on network flow and system structure, it has considered one most important feature: *voluntary co-operation among centres of existing resources.* This consideration is especially reflected in the recommendations that have just been cited. Operation of the network will largely depend on participation by many libraries, with extensive information resources, on a voluntary basis and for their own net benefit in service. These libraries cannot be compelled to make their resources available to the network. Their participation must be actively solicited, and financial support will be needed to achieve the ultimate goal—an information network that provides efficient service to users throughout the province.

In summary, the individual health science library is neither an island unto itself, nor an island in a distinct archipelago of like islands, but part of the total geography of information resources of the province. As such, it has a responsibility to provide service to this wider community. It may be specially capable in certain areas, and as such it has the responsibility to participate fully and to co-operate closely with the total information system as this system assumes growing stature in the individual health institution and in the province. At the same time, the institution's independence must be recognized. Libraries can be encouraged but not compelled to participate in giving comprehensive information service to their own users and to the whole province. Only as individual libraries recognize the needs of the health sciences community as a whole, and make common cause in an information network, do the islands lose their isolation and the potential resources become total information service.

Appendix A

LIBRARY SYSTEM USERS

Library System Users

METHOD OF ACCESS TO PROPOSED HEALTH SCIENCES INFORMATION NETWORK

Health Disciplines	Health Science Centres & Teaching Hospitals	Hospitals	Public Health Units	Public Health Laboratories	Practice
PRIMARY PROFESSIONS					
Medical					
Family Practitioners	Phone or Visit	Visit	–	–	Long Distance
Specialists	Phone or Visit	Visit	Phone or Telex	Phone	Long Distance
Dentists	Phone or Visit	Visit	Phone or Telex	–	Long Distance
Nurses	Phone or Visit	Visit	Phone or Telex	–	Long Distance
ALLIED HEALTH DISCIPLINES					
Professionals	Phone or Visit	Visit	–	Phone or Telex	Long Distance
Technologists	Phone or Visit	Visit	Phone or Telex	Phone or Telex	–
Technicians	Phone or Visit	Visit	–	Phone or Telex	–
Administrators	Phone or Visit	Visit	–	Phone or Telex	–

NUMBER OF USERS*

Health Disciplines	Totals	Health Science Centres & Teaching Hospitals	Hospitals	Public Health Units[1]	Public Health Laboratories[2]	Practice
PRIMARY						
Medical[3]						
Physicians[4]	9,354	1,584	1,737	124	4	5,905
Students	1,500	1,500				
Dental[5]						
Dentists	2,805	20	21	24		2,740
Students	500	500				
Nursing[6]						
R.N.'s	44,572	8,090	34,783	1,699		
Graduate[7]	4,620	2,000	2,620			
Student	15,854	3,691	12,163			
SUB-TOTALS	**79,205**	**17,385**	**51,324**	**1,847**	**4**	**8,645**
ALLIED HEALTH DISCIPLINES						
Professionals[8]	5,406	338	506	10	71	4,481
Technologists[9]	3,853	507	1,660	434		1,252
Technicians[10]	21,396	3,225	16,287	313	268	1,303
Students[11]	2,723	1,200	2,523			
SUB-TOTALS	**33,378**	**5,270**	**20,976**	**757**	**339**	**7,036**
GRAND TOTALS	**112,583**	**22,655**	**72,300**	**2,604**	**343**	**15,681**

* All figures are approximations and apply to the year 1968. Many sources had to be used in the course of constructing this table.

FOOTNOTES

1 Information from Local Health Services Branch, as of January 1, 1969.

2 Information from Laboratory Services Branch, April 1969.

3 Seccombe House and O.H.S.C. Annual Report.

4 Includes Specialists, General Practitioners, Residents, and Internes.

5 Manpower Committee Report to Council.

6 Manpower Committee Report to Council.

7 Nurses presumably qualified to R.N. standards but not registered with the College of Nurses in Ontario.

8 Professionals include Veterinarians, Pharmacists, Speech Pathologists, Audiologists, Medical Social Workers, etc.

9 Technologists include Therapists, Public Health Inspectors, Dental Hygienists, Medical Record Librarians, etc.

10 Technicians include Laboratory Technicians, Radiological Dental Technicians, R.N.A.'s, etc.

11 These include Pharmacists and R.N.A. Students only. Other student information pending.

LEVEL OF NATURAL ACCESS TO PROPOSED LIBRARY SYSTEM BY CLASSES OF HEALTH PERSONNEL BY SETTING

Health Disciplines[1]	Health Science Centres & Teaching Hospitals	Hospitals	Public Health Units	Public Health Laboratories	Practice
PRIMARY PROFESSIONS					
Medical					
Family Practitioners	2	1	–[2]	–[2]	1
Specialists	2	1 & 2	1 & 2	1	1
Dentists	2	1	1	–	1
Nurses	2	1	1	–	1
ALLIED HEALTH DISCIPLINES[3]					
Professionals	2	1	–	1	1
Technologists	2	1	1	1	–
Technicians	2	1	–	1	–
Administrators	2	1	–	1	–

[1] Students included.
[2] These facilities are normally staffed by physicians with D.P.H. or equivalent.
[3] Students of these disciplines are not necessarily located at health science centres or teaching hospitals.

Appendix B

CRITERIA FOR A HEALTH LIBRARY

APPENDIX B

Criteria for a Health Library

I. INTRODUCTION

In setting out criteria for a health library, a decision had to be made whether to state quantitative or qualitative standards. After much thought and examination of available data, it was felt that to give a set of figures for various libraries would be most misleading. Instead, included at the end of this Appendix is a list of figures given for different libraries as examples of what have been considered minimum standards by various bodies. More figures and criteria can be found by consulting some of the articles cited in the list of references.

The past ten years have been marked by radical revision in concepts of education for health professions and by changes in health care facilities. The rapidly changing patterns of health care delivery, with their impact on library service and those who are served, will, in fact, demand continuous revision of any statement of standards. The present statement recommends one set of criteria covering all kinds of libraries in a health care facility.

The concept of library service implies that an academically and professionally qualified librarian is responsible for administering such service programmes. Where the level of need or service does not require the employment of a professional librarian, the use of consultant service from a Health Resource Library or supervisory personnel is mandatory. Two or more health care facilities in a geographic area may pool resources and share services or make use of

service supplied through a regional health library system.

In place of definite figures we have listed important areas for attention. Various examples of suggested minimal standards are also given.

II. CRITERIA

1. Personnel

The quality of the staff is the single, most important factor in the effectiveness of the Health Sciences Library. The total number of professional and non-professional staff depends on the number of potential users, the type of patron (medical and allied health personnel, either employed by the facility or extraneous to it), the educational and research programmes of the facility, size of hospital and intensity of programmes meeting patients' needs, and the relationships established with other libraries.

No library service should be provided without continuing professional supervision, since a qualified librarian is essential for the establishment and maintenance of efficient library service. Larger institutions, including teaching hospitals and large general hospitals, and all health sciences centres, require one to five or more qualified medical librarians (see Appendix C). Training in biological sciences and Medical Library Association accreditation are desirable. Experience should include at least one year in a health sciences library. Personal qualifications include judgment, flexibility, tact, poise, initiative, creativity in administration techniques, emotional stability and good health. The librarian should have administrative status with direct access to the facility's administration. Selection and training of all personnel should be the responsibility of the librarian, as director of library programmes. Suitably qualified professional assistance will be needed in the larger libraries.

Technical and clerical staff should be available in sufficient numbers to support the work of the professional staff. For formal qualifications of such staff see Appendix C. Personal qualifications include accuracy, adaptability, and flexibility.

2. Objectives

The Health Library actively supports the philosophy and day-to-day activities of the health care facility, by providing and making accessible adequate educational and informational library materials. The size and type of health care facility, and the range of disciplines represented, determine the character and direction of the service offered.

3. Services

Service functions of the Health Library should include the following, which may be provided partly at the local level and partly through the information network:

(a) The selection, acquisition, organization and dissemination of informational, educational, instructional library materials and audio-visual material which is contained in a library collection.

(b) The provision of reference and bibliographic materials and services; this includes

(1) providing material of all kinds,

(2) providing citations,

(3) providing answers to questions.

(c) The development and maintenance of relationships with other departments of the health care facility, and with other libraries, for their mutual benefit, including a system of interlibrary lending and borrowing.

(d) The orientation of the user to the services and functions of the library, including instruction in the use of information sources.

(e) The provision of indexing and abstracting services.

(f) The Health Resource Library may, when appropriate, act as the "clinical training" library for beginning health science librarians, further the orientation and training of library assistants or library technicians, or act as a training centre for library institutes or workshops.

Hours of opening should meet the requirements of the majority of the library's users and should be as generous as possible. At the same time, material should be available at all times. This does not mean that everybody in the facility has a key to the library, but that when information is urgently needed it can be made available.

4. **Collection**

Quality is more important in the book collection than quantity. The size and range as well as the depth of coverage depend on:

(a) Number of people to be served and range of disciplines.

(b) Type of health care facility.

(b) Active participation in the network of interlibrary loan service from other libraries.

(d) Agreements with other libraries for coverage of specified subject areas or specific publications.

Selection of materials should be founded on an established collection policy, preferably a written one. This policy should cover subject scope, retention periods, acceptance of gifts, discarding of material. Lending rules, space limitations, and the amount and intensity of reference service, all have a bearing on collection policy. The collection may include materials in the following categories:

(a) **Textbooks and monographs**. These should include current publications pertinent to the educational, administrative, research, and clinical programme of the health care facility. Multiple copies of most frequently used materials may be necessary, especially when needed by different segments of the clientele. With the exception of historical works and an occasional title of permanent value, textbooks should have been published within the last ten years. The history of various health science disciplines should be represented.

(b) **Serials and journals**. A good selection of current general and specialty journals, yearbooks and annual reviews in all fields which are of interest to the health care facility is essential. Back files of journals indexed in standard indexing services should be retained for at least five years. Teaching hospitals with resident programmes and schools of nursing may require a ten-year file of

journals. The extent of the research programme and the location of the library in relation to larger health sciences libraries affect retention policies. The most frequently used journals should be bound. Journals should be physically arranged so that patrons can use them according to standard index and sequence patterns.

(c) **Research reports.** These reports now share with periodicals the first announcement of results of research and are important in any facility which has research programmes.

(d) **Reference materials.** The standard indexes of those journals contained in the library collection should be available and retained indefinitely. The reference collection should reflect the needs of the facility at all levels, i.e., resident, nursing, in-service training, suitable indexes, and appropriate government publications. One or more abstracting services, depending on the specialties covered in the total programme, are needed.

(e) **Pamphlets, reprints and non-book material.** This material should be available to meet users' need.

(f) **Non-print materials.** The library may contain microfilms and other microforms, for back files of journals, reports, etc.; slides and films of clinical or teaching interest; and other visual aids. Suitable viewing or reproduction equipment must be available for the use of such materials.

(g) **Staff publications.** Each library should maintain a file or record of all publications originated by its staff members.

(h) **Archives.** Annual reports of the facility and publications of local historical interest should be retained in the library unless located elsewhere in the health care facility.

(i) **Historical books and journals.** Intrinsically valuable or unique historical works are not suitable for hospital or similar libraries unless they pertain to the institution's history.

5. **Physical Facilities**

The library must be conveniently located. In planning a new library or a relocation or expansion of existing quarters, the physical requirements for collections, services, and library staff activities must be considered on a long-term basis to allow for the library's growth.

Consultation with a competent library building consultant is essential.

Provisions must be made for the safety of library materials and for effective working conditions for the library staff and users, e.g., structural allowance for adequate floor loads; air conditioning; adequate ventilation and humidity control for the preservation of library materials; proper quantity and quality of illumination for reading, study, and reference use of library materials; appropriate placement of ducts and outlets for electronic and electrical equipment; and the control of sound by accoustical treatment of ceiling, floors, draperies, and partitions.

Planning for allocation of space and provision of equipment should include three major areas:

(a) **Service functions.** The reference functions of the library require equipment which will place the library's reference resources in a convenient location with adequate space to facilitate their use.

(b) **Stack and storage.** The stack areas for the books and periodical collections must be readily accessible to the library's clientele and must allow for future expansion.

(c) **Office and technical processes.** It is essential that the library staff have efficient working conditions and that their area of work be located apart from the public services areas so that the necessary noise and movement will not be distracting to the users of the library.

EXAMPLES OF MINIMUM STANDARDS FOR DIFFERENT LIBRARIES

A. Hospital Libraries

1. Standards for Hospital Libraries, quoted from the U.S. Veterans Administration's Planning Criteria for medical facilities[13] and from W. D. Postell's article[9]:

Personnel. Staffing requirements for the Hospital Medical Library:

Up to 300 beds	301-500 beds	501-1,000 beds	more than 1,000 beds
1 librarian	1 librarian 1 clerk-typist	1 librarian 1 assistant 1 clerk-typist	1 librarian 2 assistants 1 clerk-typist

In all cases, part-time help could be used to keep the library open for longer hours.

These figures include patients' libraries. Taking books to patients for recreational reading would occupy one part-time helper in smaller hospitals and a full-time worker in larger hospitals: the shelving, cataloguing, and recording in a patients' library is not complicated. In many general hospitals in Canada, this work is done by the Women's Auxiliary workers.

For Nursing School Libraries of up to 300 students, a full-time librarian and a full-time clerk-typist are required.

Books and Periodicals.

Size of Hospital –	100-300 beds	301-600 beds	601+ beds
Books – medical Basic stock	300 titles to be collected within 5 yrs.	500 titles to be collected within 5 yrs.	600 titles to be collected within 5 yrs.
Annual additions	50 titles	75 titles	100 titles
Periodical – Subscriptions	35 journals	75 journals	125 journals

Periodicals —	70 vols. p.a.	150 vols. p.a.	250 vols. p.a.
Bound volumes	700 v. in 10 years	1,500 v. in 10 years	2,500 v. in 10 years

A ten-year file of periodicals is kept in each case.

Total in 15 years books and periodicals	1,500	2,750	4,100
Space			
Reader accommodation	10 seats	30 seats	50 seats

Accommodation for nursing students would be additional, possibly in a study and reading room adjacent to the library, which can be used after hours as well.

Size of Hospital	100-300 beds	301-600 beds	601+ beds
Work-room space	150 sq. ft.	200 sq. ft.	300 sq. ft.

Shelving: Allow 85 books to a 3 ft. stack unit, and estimate the number of shelves according to the 15-year total given above. Periodical shelving: allow 100 linear feet to display 120 periodicals, i.e., 18 periodicals on 15 feet of shelves.

2. From the United Hospital Fund of New York: Planning the Hospital Library[12]. Recommended standards:

   For an integrated Patient-Medical-Nursing School Library for a hospital with 400-600 beds:

   Personnel: Optimal, three trained librarians, or one professional librarian with full-time paid clerical assistants.

   Users: 400 patients, 200 professional staff, 100-200 nursing students, 10-25 nursing faculty, 38 nursing service personnel.

   Number of volumes: Patients' books: minimum 5,000 not including paper-bound books. Professional Library: 6,375-12,750 volumes including bound periodicals. Future expansion of this section: provision of shelving for up to 22,500 books in 15 year period.

Periodical subscriptions: Patients: 40-50, including juvenile. Medical, 100-500 titles. Nursing, 40-50 titles, or combined Medical-Nursing, 126-180 titles.

Seating Capacity: Patients, 25-30; Medical and Nursing, 40-70, in a combined setting.

3. Not standards, but figures taken from an article by Dorothy Dralle[4] on what she describes as a library "representative of a prosperous middle-sized community hospital"—one of five hospitals in the community— of 460 beds, serving a school of nursing, the hospital medical staff, and the members of the County Medical Society. They have a librarian, and one full-time and one part-time clerk; 918 medical books, and 965 books on nursing. Periodical subscriptions are 121 medical and 20 nursing journals. Most of the periodicals are available on back file for ten years. They had an average of 60 readers a day, did 400 literature searches and 900 interlibrary loans a year, with a limited current awareness service.

B. Health Science Libraries

It has been generally assumed that a suitable figure for a fair-sized medical school library is a capacity of 100,000 volumes, including bound periodicals and 1,200 current periodicals. This was the size quoted by the National Library of Medicine some five years ago when designating libraries capable of becoming MEDLARS Search Centres. Since that time, the periodical figure has been raised to 1,500. However, according to the Herner study[5] of the 80 United States medical school libraries surveyed, only 12 had holdings of 100,000 or more, and in the Medical Library Association survey[6] of 136 libraries in America (including five in Canada) only 17 had holdings of 100,000 or more in 1965. Beatrice Simon quotes a 1962 figure which puts the average U.S. medical library holdings at 54,779 volumes and the current subscriptions at 992[11], and according to her Canadian figures only McGill and Toronto medical school libraries were approaching this size in 1962. No other Canadian schools were even nearly as large, and current subscriptions were all well under 1,000 titles except for McGill and British Columbia.

However, mere quantity should not be the sole criterion for judging any kind of library collection. Actual volume count cannot

indicate quality and value: a library where out-of-date books are discarded systematically will have fewer volumes than a museum collection.

The Library Study Committee of the AAMC[2] says, in its 1967 Report: If one accepts the guidelines that existing user surveys suggest are the most reliable—especially if their use is combined with an aggressive weeding policy and an interlibrary backup arrangement —it is apparent that a collection of between 30,000 and 45,000 bound journals will satisfy the great majority of user requests in a health sciences library in an educational setting. Since the number of texts and monographs will constitute between 25 per cent and 40 per cent of the total holdings, it is apparent that a health sciences library with total holdings of from 50,000 to 70,000 volumes will be a very effective working library, or core, for most educational programmes in the health sciences.

REFERENCES

1. Anderson, Ellen M. Library Standards: a symposium. The National League for Nursing. *Bulletin of the Medical Library Association, 51:* 83-87, 1963.

2. Association of American Medical Colleges. Library Study Committee. The health sciences library: its role in education for the health professions. *Journal of Medical Education,* v. 42 #8 part 2, p. 28, Aug. 1967.

3. Babcock, Kenneth B. Library standards: a symposium. The Joint Commission on Accreditation of Hospitals. *Bulletin of the Medical Library Association 51:* 81-83, 1963.

4. Dralle, Dorothy. The community-hospital library. *Journal of the American Medical Association 194:* 1097-99, Dec. 6, 1965.

5. Herner, Saul, and others. *A recommended design for the United States medical library and information system.* Washington, Herner and Company. 2v. 1966.

6. Medical Library Association. Committee on Surveys and Statistics. Library statistics of schools in the health sciences: part 1. *Bulletin of the Medical Library Association 54:* 206-29, 1966.

7. Michael, Max Jr. The medical library's vital role in physicians' continuing education. *Hospital Progress 49:* 92 *passim,* Oct. 1968.

8. Pings, Vern M. *Educational programmes for hospital health science librarians.* University of Washington School of Librarianship: Proceedings of an invitational Conference on Education for Health Sciences Librarianship, Sept. 1967. Seattle, 1968, P. 87-102.

9. Postell, W. D. Planning the hospital library. *Hospital Progress 44:* 84-85, Feb. 1963.

10. Robinow, Beatrix H. *Outline for the organization of hospital libraries.* Toronto, Canadian Hospital Association, 1967.

11. Simon, Beatrice V. *Library support of medical education and research in Canada.* Ottawa, Association of Canadian Medical Colleges, 1964.

12. United Hospital Fund of New York. Committee on Hospital Library Architecture. *Planning the hospital library.* 1957, repr. 1963.

13. U.S. Veterans Administration. Dept. of Medicine and Surgery. *Planning criteria for medical facilities.* M-7, Part 1. Chapter 17. Library service. May, 1964. Rev. Oct., 1967.

14. Case Western Reserve University. Centre for Documentation and Communication Research. *Feasibility study for continuing education of medical librarians.* Interim report, January 15, 1968.

— — *Education for hospital library personnel.* Interim Reports nos. 2, 3, July, Aug. 1968.

Acknowledgements: We have drawn heavily on the *Proposed Standards for Library Services in Health Care Facilities,* prepared by the Hospital Library Standards Committee of the Association of Hospital and Institution Libraries, American Library Association. This draft has not been published yet and still has to be considered by the Catholic Library Association, the Medical Library Association, the Special Libraries Association, and relevant units of the American Library Association, before becoming an official statement. A second important document, the Standards Revision of the *Joint Commission of Accreditation of Hospitals* (U.S.A.) will be published in 1969. A draft appeared in December 1968.

Appendix C

LIBRARY MANPOWER

APPENDIX C

Library Manpower

1. CATEGORIES OF PERSONNEL

Information services for the health sciences must depend on personnel trained to make best use of local and network resources, and with training and background suited to the level of service in which they operate, as distinguished in Section III. Three types of staff are needed: library assistants (clerical/office staff), technicians, and professional staff. Staff requirements in various information units can be outlined.

a. Types of Personnel

(1) **Library Assistants** perform routine tasks within established functions, following methods established and direction given by supervisory staff. Library assistants use many basic clerical and office skills, but in addition learn library functions and techniques special to the field of information handling.

(2) **Library Technicians** perform tasks requiring detailed knowledge of library functions, techniques, and operations, with minimal supervision or with referral to senior technicians or professional supervisors for decisions on policy or interpretation of difficult situations. Their knowledge of library materials and operations enables them to render direct service to users, and to carry out many complete operations not requiring professional judgment and theoretical knowledge. Library technicians may operate a small library unit for daily

routine operation, with supervisory visits from a librarian and access to professional assistance through the network.

(3) **Professional staff** (librarians, information specialists) possess formal academic qualifications representing both extensive theoretical knowledge of the information and library field, and knowledge of the function and operation of information services. Professional staff design, develop, and operate information services; evaluate and organize informational materials; and interpret the organization of these materials to users who may themselves be specialists in the subject content of the materials.

2. TRAINING

Appropriate training for each level of information services staff can be described in general terms, and the recognized or appropriate channels for training, or sources of recruitment, can be indicated.

a. **Library assistants** require high school graduation and some office skills (typing, filing). Knowledge of library functions and techniques is gained during the first year's employment. As experience is gained, a library assistant can assume progressively more responsible functions.

b. **Library technicians** have formal education preferably at the post-secondary level, and a knowledge of library functions and techniques gained either by formal training or by extended experience. Under direction, a library technician is responsible for the effective performance of diversified and complex duties, and the application of judgment in using and interpreting defined policies, rules, or standards. Several avenues are open for the recruitment, training, and development of information technicians.

(1) University graduates, preferably with a bioscience or premedical background, can learn library functions and techniques during the first year of employment in a large library, under the supervision of librarians.

(2) Registered nurses, biomedical laboratory technicians, and other persons with valuable background experience in the

health sciences, may transfer to information services and learn library functions and techniques through similar means: on-the-job instruction, special in-service training courses, intensive short courses, and supervised work.

(3) Library technician graduates, having completed a two-year diploma course in library technology at a College of Applied Arts and Technology or similar institution, may be attracted to health sciences information services. In-service training, or intensive short courses, may be needed to develop knowledge of the literature and needs of users in the health sciences. At the present time, not enough graduates of courses in library technology are employed in Ontario to enable any final appraisal of their exact value in the proposed information services.*

To provide for adequately trained staff for the information network, the Committee has recommended:

(a) That a health sciences librarian be included on the advisory committee for library technician courses at the Colleges of Applied Arts and Technology, wherever it seems likely that diplomates from these courses may find employment in health sciences libraries. Such advisory committees are already recommended in general terms to include a representative from a field of special librarianship.

(b) That the development of health sciences information network make adequate provision for a continuing programme of training for health sciences information technicians, both by the provision of short courses for staff now active in such units, and by the provision of training for health sciences technicians interested in transferring to the information field.

(c) That courses for library technicians make available specific technical subjects for health sciences information

* A colloquium on Employment of the Library Technician was held at St. Michael's College, Toronto, Dec. 6, 1968, by the School of Library Science, University of Toronto. Selected bibliography, job descriptions, and summary proceedings are available from the School. The Medical Library Association has recently created a Committee on Library Technician Training and has approved a programme in Medical Library Technology at the Upstate Medical Centre, Syracuse, N.Y.

technicians, for example, familiarity with reference tools in the health sciences.

(4) Library assistants with extensive experience (four to five years) and suitable in-service training (short courses, night school, direction and supervision by librarians) can develop to technician level. Regular performance reviews and assessments should be made of the progress and development of library assistants towards this objective.

c. **Professional staff** (librarians and information specialists): Librarians hold a first university degree followed by a degree or diploma representing one or more years of professional education in librarianship. Medical librarians must in addition complete a specified course in the field and an experience requirement.* The independent professional function and judgment of trained health sciences librarians is required in every information centre giving intensive service. This includes hospital libraries (other than those institutions having only "basic units"), specialist and research institutes, and all schools of medical and health sciences.

(1) Training of librarians is provided in schools of library and information science, many of which are accredited by the American Library Association** and all of which are attached to universities. Sufficient schools are available in the United States and Canada as a whole.

For information service in the health sciences, a background in the biological sciences or health sciences is particularly valuable. A basic degree in biological, physical, or health science, in nursing or a related field such as psychology, or completion of a premedical option within the bachelor's degree, will give a useful background in the terminology and method of science, and appreciation of the philosophy and approach of the health sciences, to which optional courses in scientific or health sciences librarianship, within the professional degree programme, will give basic familiarity with the bibliographic tools and methods in the field.

* The Medical Library Association requires for its Certificate the completion of an M.L.A. approved course in medical librarianship at a library school accredited by the American Library Association and in addition (for Grades II and III) a term of experience in a Medical Library.

** Accredition of library schools by the American Library Association is recognized in Canada by the Canadian Library Association.

Scholarships offered by the National Research Council of Canada, for scientific and technical librarianship, are an example of inducements for qualified candidates. So also is the expansion of programmes of scholarship and assistance to attract candidates with a bioscience or premedical background into training for health sciences information services.

(2) Better knowledge of career possibilities in librarianship and the information sciences, in regard to challenge, promotion, status and salary, could aid in recruiting desirable candidates. The attention of the various concerned agencies—universities (both generally, and their library schools), health science institutions, concerned government agencies, professional associations in both librarianship and the health sciences—should be drawn to the need for intensified publicity and an updated public image in the field.

(3) Professional personnel should be encouraged to participate in continuing education programmes, and in activities of local and national professional associations. Paid leave and financial support to attend professional meetings and educational programmes should be consistent with that made available to other departments of the health care facility, and training programmes and courses made available by or on behalf of the health sciences information network should include the necessary assistance for all concerned persons to participate.

The Committee has also recommended that library schools devote increased attention to the needs of persons already working in health sciences libraries and information services. This might include some courses for degree programmes during the summer months for persons unable to devote extended periods to full-time studies.

3. STANDARDS FOR PERSONNEL

Standards for health sciences librarians, as already indicated, are those of the Medical Library Association. Standards for library technicians and library assistants can be developed analogous to those in major public and academic libraries, although there is at present no general standard struck by professional associations or

accrediting bodies. The Ontario Department of Health could, in setting up a scheme of grants for health science information units, include standards for staff, which might be developed by this Committee on the lines suggested above under training, or adapt those under development by other professional associations.*

Standards available for information units in institutions, such as hospital libraries, include *Outline for the organization of hospital libraries* by Beatric H. Robinow,** and publications of the Association of Hospital and Institutional Libraries, including standards now in revision.***

a. **Number of Staff**

The *quality* of staff is the single most important factor in the effectiveness of the health sciences library. The total number of staff required in an information unit, other than the "basic unit," depends on:

(1) **Service load**, made up of:

(a) **Users**. The number of potential users; the type of user (medical and paramedical personnel; within the institution or facility, or outside it);

(b) **Educational and research programmes** of the facility;

(c) Size of institution**** and intensity of programmes meeting patients' needs;

(d) **Relationships** established with other libraries (either to serve

* The Canadian Association of College and University Libraries is developing a Position Classification Report which will include all grades of library assistants and technicians as well as professional positions.

** Toronto, Canadian Hospital Association, 1967. 96p.

*** American Library Association, Association of Hospital and Institutional Libraries. Hospital Library Standards Committee. *Proposed standards for library services in health care facilities.* (unpublished draft, 1968). Also: Joint Commission on Accreditation of Hospitals. Draft revision (1969) of standards.

****Bed Capacity is the usual measure of size for hospitals; number of research staff is the critical factor in specialized institutions. Where the number of students is definite, as in a medical school, the combination of number of teaching and research staff, and number of students, is the measure of size.

them or dependent on them for information).

(2) **Dynamics of the information resources**

A static library is a dead library; the constant appearance of new information requires constant growth of the collection and weeding of obsolete material. The staff required will be affected by collection size and growth, which can be measured as:

(a) Volumes added annually;

(b) Periodical titles currently received;

(c) Holdings (total volumes and other forms of material).

(3) In a specialized information unit such as a health sciences library, detailed familiarity with the literature is the first requirement for staff, and the service given is correspondingly intensive, with correspondingly less onus left on the individual user. The patron is not only *helped,* he may be *given* the information he requires. Standards which could be developed should therefore be used rather as *indications* than as literalisms.

(a) One staff member may be added for every thousand volumes per year *increment* in the *current acquisition* rate.* (Example: To add 5,000 volumes a year requires one more staff member than to add 4,000 volumes a year).

(b) One staff member may be added for every *increment* of 400-500 current periodical subscriptions. (Example: A library receiving 800 current periodicals may have to add one staff member for the increased workload when it increases its subscriptions to 1,200).

(c) One added staff member may be needed for each defined increment in service to local users, i.e., within or close to the institution. Service load may be measured, for example, as

* The report on *Growth in ARL Libraries, 1950-1980* (Purdue University. Libraries and Instructional Media Research Unit. 1965) indicates that a 1,000-volume increment in acquisitions *rate* costs an average $13,750 in salaries.

circulation statistics or enrolment increase.*

b. Typical staff configurations or *organization* schemes could be indicated for a health sciences library of a specific size but as a *general guide only*. A specific recommendation could be made for a given situation by an experienced librarian or consultant.** As an example, a *research unit* might require:

(1) *At least* one *full-time* librarian, supported by *at least* two full-time library assistants, in an institution serving staff only during ordinary business hours (9-5, Monday-Friday).

(2) *Additional* staff on the basis of factors expressed above in a.(3).

(3) *At least* two full-time librarians, supported by *at least* six library assistants/technicians, in any institution serving staff or students who are on the premises during extended hours (weekdays after 5 p.m., or weekends), the library maintaining service at appropriate times during those periods.

(4) *Sufficient* professional/technical staff to provide knowledgeable service to users during all periods when users are on the premises of the institution.

(5) *At least five librarians* supported by appropriate library assistants and technicians, according to the standards of the Medical Library Association, for the library of any health sciences centre.

* Ratio of library staff to research users varies from 1:122 to 1:30 in results tabulated by Strauss, Strieby and Brown, *Scientific and technical libraries* (N.Y.: Interscience, 1964), Table 1, p.24. Herner and Heatwole, *The establishment of staff requirements in a small research library* (Chicago: Association of College and Research Libraries, 1952; ACRL Monograph No. 3) found a library staff of just over three librarians and three assistants needed for a scientific staff of 400. One staff member for each increment of 300 users has been suggested as one possible service-load standard.

** The quantitative statements in Appendix B are cited as published figures which may be useful comparisons, but are not necessarily recommended by this Committee.

4. DISTRIBUTION OF PERSONNEL

a. Primary Contact Libraries

Information service units will vary not only in number of staff needed, but in the level of staff appropriate to the complexity of service offered, the complexity of informational resources, and the questions posed by users.

(1) Basic health information units containing minimal-level collections should have a minimum of one library technician. This technician can maintain and exploit the small collection, and, where the local resources are insufficient, interpret and send forward inquiries from the individual user to the higher levels of the network. This information technician should be assigned full-time to the information unit.

(a) Consultation by *professional field staff* must be routinely available to basic units. A library technician needs and deserved the advice, support and supervision of a librarian. To maintain the close liaison with an information network, this professional consultation should be provided from the provincial network co-ordinating unit for any unit which does not have its own professional staff.

(b) Supporting *clerical and office services* should be available to the basic health information unit through the institution's offices, even if supporting clerical staff cannot be assigned exclusively to the information unit. As the size of the unit grows, one or more supporting clerical staff may be required by the unit itself.

(2) *Specialist units* and *research and teaching units* with extensive information resources, and intensive service responsibilities within their own institutions, as well as co-ordination or specified responsibility to the information network, will require professional staff (librarians) supported by library assistants and technicians. A *minimum* will be one librarian supported by not less than two office/technical staff. Additional librarians may be needed to supply extensive information service with their specialized knowledge, and for each professional position not less than two supporting staff must be available.

b. **Health Resources Libraries**

Health Resource Libraries require trained librarians supported by adequate numbers of library assistants and technicians. The usual distribution of positions will be, for each professional staff member, supporting staff of one library technician and one to two library assistants.

(1) The *primary staff* of the library, *considered as a functional library apart from the network,* will be not less than five librarians* and a suitable supporting staff of ten more positions. The total staff will vary with the size, responsibilities, and objectives of the library, and should be determined by the librarian in charge. A large health resources library will have upward of fifteen to twenty staff.

(2) Ideally, reference and information service *to the network* might be available twenty-four-hours-a-day, seven-days-a-week, requiring at least four librarians. Actual network service may be available during extended hours but less than 168 a week. The undivided services of not less than three librarians are likely to be required for network information service. Network service facilitated by adequate telecommunications may make it feasible to give service at slack periods from a single resource centre for the whole province, thus reducing slightly the total requirement for professional staff.

5. ESTIMATED TOTAL STAFF NEEDED IN ONTARIO

a. The number of information staff needed would depend on network design, number of centres designated at the various levels of service, and support schemes to encourage provision of information service. An estimate of the *order of magnitude* of staff needs for a hypothetical network could be made from available information on health care facilities.

(1) Hospitals:** In Ontario there are 18 Group A hospitals in five centres (Toronto, Hamilton, Ottawa, London, Kingston)

* Medical Library Association standards.

** All statistics are from the 1967 *Report* of the Ontario Hospital Services Commission.

and these centres are also the locations of the health sciences teaching centres. There are Group B or C hospitals of 200 beds or over in 29 other centres and in four Toronto metropolitan area suburbs. There are 167 hospitals under 500 beds in Ontario, and a total of 226 public hospitals.*

(a) Each Group A hospital requires its own research level library:

18 hospitals: Level (2):	18 librarians
	36 support staff

(b) At least one basic information unit in each city having one or more Group B or C hospitals, as a minimum; *or* as a maximum, a basic information unit in each Group B or C hospital:

Minimum 33 centres:	33 technicians
Possible: 51 hospitals:	33 librarians
	84 support staff

(c) A possibility of a basic information unit in every hospital, with one research-level library in each centre having more than one hospital:

33 centres:	33 librarians
	66 support staff
Plus 193 other hospitals:	193 technicians

(2) Health sciences centres: There are six, including the Ontario Veterinary College, which will have information facilities similar to all such centres, and probably one or two additional intensive information service centres in new teaching or research institutes. Assume a maximum of eight such centres, requiring five librarians and ten support staff each:

40 librarians
80 support staff

* There are a total of 341 hospitals of *all* types in Ontario according to other figures.

(3) Network resource centres: Assume that six major health regions may be designated in Ontario, and that the network information responsibility is given to one health sciences library in each region, over and above its primary staff. For the *additional* network service, each such library must add four librarians and at least one supporting staff member for each librarian.

24 librarians
24 support staff

(4) Co-ordinating staff: Assume that an established basic library requires supervision by a librarian (on demand or routinely) not less than one day a month. A staff of field co-ordinators will be needed; each such librarian can serve not more than 20 libraries. For a possible 33 plus 193 hospitals having basic information units, 10 to 12 field co-ordinators attached to the regional Health Resources Libraries would be needed. Each field staff member will need at least one supporting staff member (office staff).

10-12 librarians
10-12 support staff

b. Total estimated staff requirements:

Minimum: 92 librarians Possible: 127 librarians
376 support staff 439 support staff

Rounded estimate: 90-125 librarians
190-220 library assistants
180-220 library technicians

6. EVALUATION

a. **Supervision and liaison** must be constantly available to ensure smooth operation of an information network, availability of information to the user at every terminal of the network, and best use of the funds invested in the network. Such supervision and liaison must be provided at a high level of professional development in librarianship. It must be provided in part by the close co-operation of the professional staff in large information

facilities, and most importantly by a supervisory field staff provided by the network, and available both on call and routinely to those information facilities which do not have senior professional staff, or which have no professional staff. The definition of types of personnel has adequately indicated that library assistants and technicians perform duties within a frame of policy method and procedure developed with professional knowledge, and require supervisory assistance and consultation and advice on policy or interpretation of difficult situations. Recourse to the network information service is not sufficient for the procedural minutiae which can be settled with on-the-spot supervisory assistance. In each major centre (the 33 centres indicated) some professional assistance is likely to be available from librarians; but there must in addition be a field staff of librarians available in every region.

Appendix D

NETWORK CO-ORDINATION

APPENDIX D

Network Co-ordination

1. **Proposed Responsibilities of the Provincial Co-ordinator and Operating Committee**

   (1) Keeping abreast of, and recommending where feasible, the latest methods and technology of library and information science.

   (2) Evaluation of user requirement and unmet need by means of province-wide periodic or special studies.

   (3) Co-ordination of interlibrary loan and retrieval procedures between Health Resource Libraries and federal level information resources to maximize flow, minimize impediments, and standardize procedures by appropriate use of feasible technology and mutually satisfactory procedural routine.

   (4) Co-ordination of National Science Library SDI (Selective Dissemination of Information) profiles requested by health personnel in Ontario. The monitoring aspect will serve the determination of where and when a provincial outpost should be established and what, if not all, NSL/SDI services should be assumed by such an outpost.

   (5) Co-ordination of any projects related to library and information science that involve federal level library services and any health information component(s) in Ontario.

(6) Liaison with private provincial associations which have significant library resources, to encourage their participation within the provincial system.

(7) Such recommendations as are required for the implementation and maintenance of a provincial health information retrieval and library system.

2. **Proposed Functions of Regional Co-ordinators**

(1) Liaison, through the chief Health Resource librarian, with provincial network co-ordinator.

(2) Facilitating and expediting flow of information within the region, to and from other Health Resource Libraries, as well as the Central Resource.

(3) Providing assistance and consultation to Primary Contact Libraries in the region.

(4) Keeping abreast of, and recommending where feasible, the latest methods and technology of library and information science.

(5) Provision of continuation training courses for professional librarians and library technicians as need is evidenced, by use of within-system resources or by making use of recognized programmes mounted in or outside the province.

(6) Assisting in maintenance of minimum standards by Primary Contact and Health Resource Libraries.

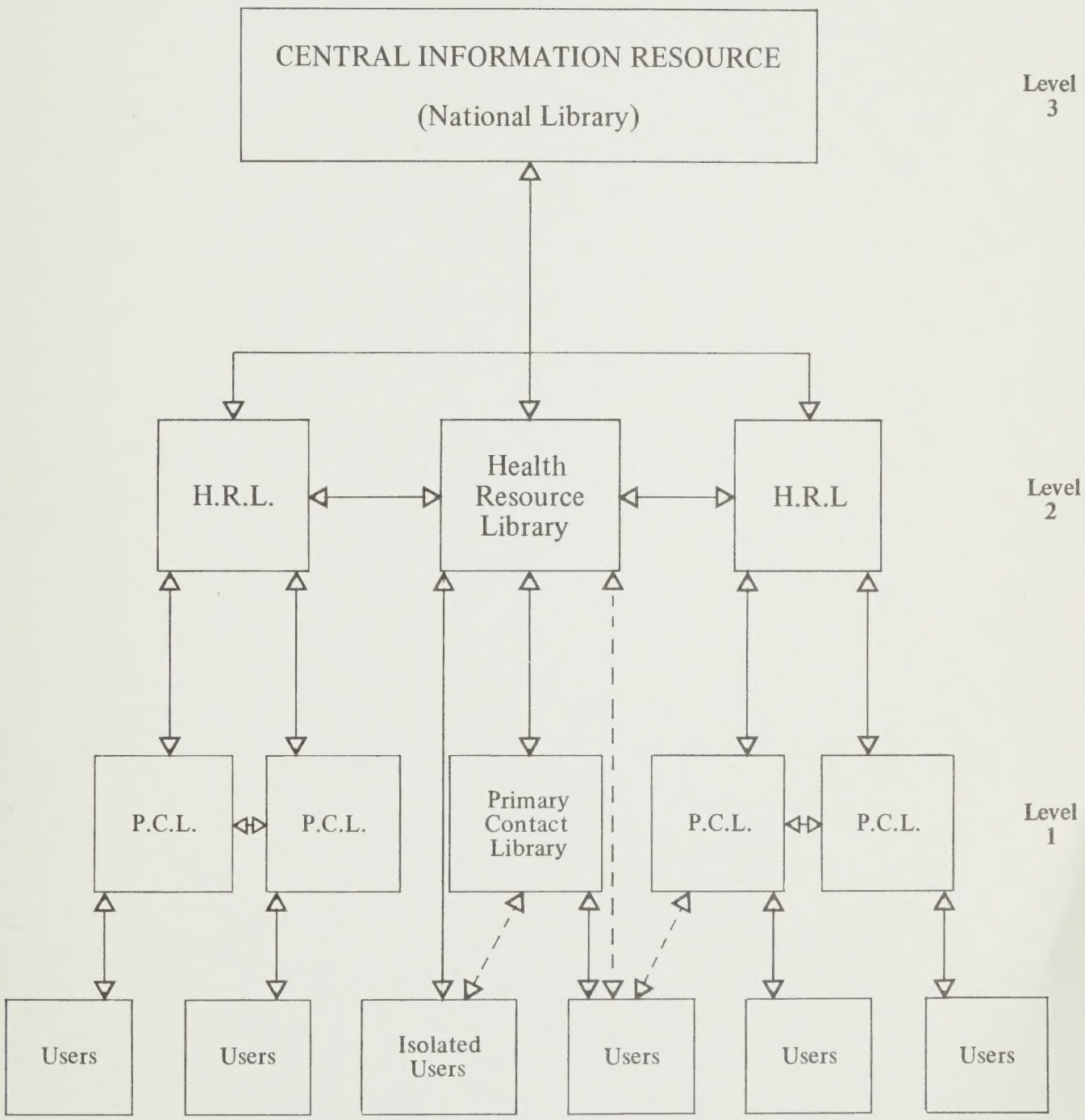
(7) Suggesting higher standards for such Primary Contact and Health Resource Libraries where the user community has special requirements.

Appendix E

HEALTH SCIENCES INFORMATION NETWORK PATTERN OF INFORMATION FLOW

Health Sciences Information Network

PATTERN OF INFORMATION FLOW



——— recommended access

– – – – – example of alternate access